THE SPHINCTER REFLEXES IN TABES DORSALIS AND PARESIS.[1]

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During the past few years, I have been particularly interested, while examining patients suffering with rectal diseases, in the investigation of the condition of the sphincteric reflexes in cases of nervous diseases involving the posterior and lateral columns of the spinal cord, particularly in tabes dorsalis and in those cases of paresis showing tabetic symptoms.

In several cases of locomotor ataxia it was found that when the finger was introduced into the rectum, firm pressure on the sphincters, in a lateral direction, would cause them to relax. The lower portion of the rectum could then be viewed without resorting to the use of a speculum. This loss of the normal sphincteric tone, in tabetic cases, led me to extend my researches to other nervous conditions, particularly to paresis, in which tabetic symptoms, frequently associated with more or less incontinence of feces, appear late in the course of the disease.

This led to a further and more detailed investigation of the subject. In a series of twenty-eight paretics, the loss of muscle tone was found in twenty-four. In one case the contraction was normal and in three cases the condition of the muscle was doubtful. In two doubtful cases of paresis, the condition was present in one and doubtful in the other. In one case of paranoia and in two cases of chronic dementia the reflexes were normal. Eight cases of locomotor ataxia gave positive evidence of lessened myotatic irritability. A doubtful case of tabes dorsalis showed a decided relaxation of the external sphincter, associated with a redundant condition of the anal skin.

In three cases of ataxia the relaxation of the external sphincter was quite noticeable, although the disease was in an early stage. This absence of the normal contraction is apparently caused by a lessened myotatic irritability associated with a sensory paralysis, more or less pronounced, involving the cutaneous margin of the anus and the rectal mucosa. In paresis this condition is not so marked except in those cases presenting tabetic symptoms.

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In four cases of ataxia, the other symptoms were associated with frequent attacks of agonizing pain in the rectum, probably examples of rectal crises.

The rectal pain referred to in these cases deserves special mention. The pain was lancinating in character and frequently agonizing in intensity. In all cases it apparently began suddenly, with no warning, and lasted from a few seconds to several minutes, disappearing suddenly and completely. The time bore no relation to the condition of the rectum, whether before or after defecation, and the expulsion of flatus caused no relief.

In examining these cases, the internal sphincter shows considerable power, but upon strong pressure there is no corresponding contraction of the external sphincter, which, under normal conditions, contracts firmly about the finger, preventing a view into the lower rectum. When the finger is inserted into the normal rectum the sphincters can be felt to contract firmly about the finger, the rhythmic character of the contractions being quite noticeable. In the tabetic case this rhythmic contraction is entirely absent.

The ataxia anus, at times, presents another peculiarity well worth noting. After the anus has been dilated by firm pressure with the finger, when the finger is removed the sphincter remains relaxed and does not immediately contract as one would expect. This is apparently due to the loss of muscle-sense, leaving the patient unaware that the muscle is relaxed.

There is another condition which may easily be mistaken for a sphincteric paralysis, and that is where there is a deficient development of the sphincters, a condition frequently associated with procidentia recti. Pressure on the sphincters in these cases, will give the same view of the lower rectum, but the rhythmic contraction, mentioned above, can usually be felt, and a careful examination will reveal the true condition.

In many cases with lessened sphincteric tone, the anus appears funnel-shaped, due to the complete relaxation of the external sphincter, while at the same time, the margin of the anus is devoid of the radiating folds usually seen in the normal subject. The perineal region, as well as the underwear of the patient is frequently soiled with traces of feces and mucus which have leaked through the anus without warning. Because of the relaxed condition of the external sphincter, the skin at the margin of the anus often seems redundant and baggy, simulating the appearance noted in some cases of procidentia. Indeed, a prolapse of the mucosa is sometimes seen in these cases. At times these folds of skin may be conspicuous by their absence, giving the anus the typical infundibuliform appearance, ascribed to cases practicing passive pederasty. These conditions do not indicate the practice of pederasty as strongly as they point to the sensory paralysis due to a degeneration affecting the nerve supply of the muscular mechanism. Sexual perversion and mental abnormalities and the rectal conditions I am describing may be considered, at best, as independent results of symptoms having a common source.

In reading over the more recent publications upon rectal diseases, I fail to find any specific mention made of this sphincteric paralysis, which is essentially sensory in type. Tuttle (p. 926), says: "Spasm and pain about the rectum are not infrequently symptoms in the beginning of locomotor ataxia; and in many cases the pains occur in the rectum before they do in the legs and sciatic regions." My own experience has been that extreme spasms in the sphincters is usually absent in tabetic cases, although there is a certain amount of tenesmus present during an attack of rectal pain, simulating, to a certain degree, that produced by a sphincter-spasm. Most cases suffer intensely from constipation, necessitating the persistent administration of laxatives. In spite of this constipation, there is a sense of rectal discomfort. The patient has a bearing-down sensation suggesting a desire for stool. The attempt at having a stool is usually unsuccessful and no relief is obtained from the symptoms. In one case of tabes this discomfort was temporarily relieved by divulsion of the sphincters but in a few months the condition was worse than ever.

Allingham states that "in the beginning of mania one often observes the patient has severe pains in the rectum without any pathological condition to account for the same." In no place do I find that he mentions a paralysis of the sphincters, except as an accidental condition, due to injury or to some obscure nerve disturbance. He does, however, mention a lessened degree of the sensation in the rectum, in cases having sclerosis of the posterior columns of the cord, producing a condition of partial incontinence. In all probability an examination of these patients would reveal the condition mentioned in this article.

In tabes dorsalis, this sphincteric paralysis with its associated loss of muscle tone, may be noticed before any of the other phenomena become apparent. Frequently there can only be found a slight diminution of the pupillary reflexes while the patellar reflexes show little if any change. Cutaneous, articular and muscle sensations will probably show some impairment if a careful examination be made.

When a case is found with any abnormal depression of the sensory functions of the anus, while not proof positive of a tabetic condition, the other reflexes should be tried. Whether this sign will be of any value to the neurologist remains to be seen, but to the proctologist it is of great importance. Should any operation be performed upon the rectum or anus, where it is necessary to divulse the sphincters, the surgeon may be blamed unjustly for causing incontinence. In cases of ataxia suffering from rectal crises, a divulsion of the sphincter, in a few instances, will give temporary relief, but the pain soon returns, accompanied by an ever increasing paralysis of the sphincters, so that it is a grave question under what circumstances we are justified in operating on these cases.

To summarize, it may be said that, in certain cases, notably in paresis and in tabes dorsalis, there is an interference with the sensory distribution to the nerves supplying the sphincters, characterized by loss of muscle tone.

In certain cases there is an infundibuliform appearance of the anal aperture. There may also be partial or complete incontinence, due to the relaxed condition of the muscles and to the more or less complete loss of sensation of the rectal mucosa and contiguous structures. This leakage or partial incontinence is, of course, caused by the absence of sensation in the rectum, so that the patient is unaware of the fact that his bowels should be evacuated. This incontinence is of the same type as the condition of the bladder which we call "paradoxic incontinence." It may be so pronounced that a complete bowel movement may take place before the patient is aware of the fact that he has a stool in his rectum.

Attacks of severe pain in the rectum, unaccompanied by any definite anal or rectal lesion, and associated with a relaxed external sphincter, should create in the mind of the examiner, a suspicion of a beginning tabetic or paretic condition and a very careful examination of the other reflexes should be made.

This sensory paralysis of the sphincters may be found in nervous conditions other than tabes dorsalis and paresis, but I feel confident that this loss of reflex points definitely to some pathologic process in the nervous mechanism controlling the action of the sphincters, and may give some valuable information in making a diagnosis, both from the standpoint of the neurologist and of the proctologist.